UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/659,125	09/11/2000	Clayton L Davidson	60276	4337

23735	7590	07/28/2004

DIGIMARC CORPORATION
19801 SW 72ND AVENUE
SUITE 250
TUALATIN, OR 97062

EXAMINER
EDWARDS, PATRICK L

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 07/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/659,125	DAVIDSON ET AL.
	Examiner	Art Unit	
	Ryan J. Miller	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 June 2004*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-15, 18 and 19* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-15, 18 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 September 2000 and 14 November 2003* is/are: a)☒ accepted or b)☐ objected to by
the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date *11*.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

1.   The response received on June 11, 2004 has been placed in the file and was considered

by the examiner. An action on the merits follows.

Response to Arguments

2.   Applicant's arguments filed June 11, 2004 have been fully considered. A response to

these arguments is provided below.

37 CFR 1.75 Claim Objections

Summary of Argument: The applicant argues that the issue concerning claim 7 has been

addressed by an amendment to page 6 of the specification. The applicant further argues that no

new matter is added, as this subject matter was already present in claim 7 as originally filed as

well as in Fig. 1. (see applicant's remarks: page 7, paragraph 3).

Examiner's Response: The examiner finds the applicant's arguments persuasive. The

examiner has withdrawn the objection to claim 7.

35 U.S.C. 112, First Paragraph Rejections

Summary of Argument: Regarding claim 6, the applicant argues that support for claim 6,

particularly the language that "the watermark decoding operable to decode a watermark that has

been embedded redundantly in the image and varies in the image", is found in the incorporated-

by-reference application 09/503,881 (now patent 6,614,914) (see applicant's remarks: page 7,

paragraph 4).

Regarding claim 7, the applicant argues that the rejection has been obviated by the

amendment to the specification.

Examiner's Response: Regarding claim 6, the examiner finds the applicant's arguments persuasive. The rejection of claim 6 has been withdrawn. However, the attempt to incorporate subject matter into this application by reference to application 09/503,881 (now patent 6,614,914) is improper because essential material may not be incorporated by reference to a U.S. patent which itself incorporates "essential material" by reference. This will be further discussed in the objection to the specification below.

Regarding claim 7, the examiner disagrees. It appears that the applicant misunderstood the examiner's rejection. Claim 7 is being rejected because claim 7 is essential subject matter that has been omitted from the independent claim. The examiner has based the determination that claim 7 is essential subject matter on the fact that the applicant provided lengthy arguments regarding claim 7 in the response received on November 14, 2003 (see applicant's remarks: page 11, paragraph 2). Therefore, the examiner suggests incorporating the subject matter of claim 7 into claim 6 in order to obviate this rejection.

Prior Art Rejections

35 U.S.C. 102(b) rejections

Summary of Argument: Regarding claim 13, the applicant argues that the Suzuki et al. (U.S. Patent No. 5,621,810 A) reference does not detail precisely what he means by watermark. The patent makes a reference to the term at col. 8, line 8. The watermark referred to in Suzuki et al. is a conventional paper watermark. Furthermore, Suzuki et al. does not consider blocks likely to have a recoverable watermark, the reference is merely searching for red seals. Claims 14 and 15 are similarly allowable (see applicant's remarks: page 7, paragraph 6 – page 10, paragraph 4).

Regarding claim 19, which the applicant has amended to include the limitations of claim

16, the applicant argues that claim concerns encoding whereas Ratnakar (U.S. Patent No.

6,556,688 B1) concerns decoding (see applicant's remarks: page 10, paragraph 9).

Examiner's Response: The examiner disagrees. The claims in the instant application do

not require that the watermark is digital. The claims merely call for a watermark. Although the

watermark in Suzuki et al. is a paper watermark, it still falls within the broad claim language of

"a watermark". Therefore, Suzuki et al. also reads on claims 13-15.

Regarding claim 19, the examiner disagrees. The claim calls for the calibration data to be

used to facilitate "detection of a watermark". Therefore, the calibration data is used during the

decoding of the watermark, not during the encoding as argued by the applicant.

35 U.S.C. 103(a) rejections

Summary of Argument: The applicant argues that claim 18 requires that tracer data be

encoded into the image in response to detecting a watermark in the image. Neither Ratnakar nor

Stefik et al. (U.S. Patent No. 5,629,980 A) is understood to teach or suggest such a feature (see

applicant's remarks: page 10, paragraph 8).

Regarding claims 3-12, the applicant argues that the same arguments as those applied to

the rejection under 35 U.S.C. 102(b) as anticipated by Suzuki et al. can be used (see applicant's

remarks: page 11, paragraph 1).

Examiner's Response: The examiner disagrees. Stefik et al. discloses encoding tracer data

into the image in response to detecting a watermark. The reference discloses that when a printer

prints a work, the fee is credited to the creator automatically by detecting a watermark. Then

tracer information is embedded in the image to prevent unauthorized printing of the document

(see column 48, lines 17-26). Therefore, the embedding of the tracer information is, in a sense, in

response to the automatic payment (i.e. detecting a watermark).

Regarding claims 3-12, the examiner disagrees as can be seen in the arguments provided

above with regard to the 35 U.S.C. 102(b) rejection.

Specification

3.   The attempt to incorporate subject matter into this application by reference to application

09/503,881 (now patent 6,614,914) is improper because essential material may not be

incorporated by reference to a U.S. patent which itself incorporates "essential material" by

reference. Applicant is required to amend the disclosure to include the material incorporated by

reference. The amendment must be accompanied by an affidavit or declaration executed by the

applicant, or a practitioner representing the applicant, stating that the amendatory material

consists of the same material incorporated by reference in the referencing application. See *In re*

Hawkins, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ

163 (CCPA 1973); and *In re Hawkins*, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).

Claim Objections

4.   The following quotation of 37 CFR § 1.75(a) is the basis of objection:

> (a) The specification must conclude with a claim particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention or discovery.

5.   Claim4 is objected to under 37 CFR § 1.75(a) as failing to particularly point out and

distinctly claim the subject matter which the applicant regards as his invention or discovery.

The claim recites the limitation "the printer driver" in line 1. There is insufficient

antecedent basis for this limitation in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7.   Claim 7 is rejected under 35 U.S.C. 112, first paragraph. Claim 7 calls for "identifying potentially overlapping blocks that are likely to include a watermark signal" which the applicant considers critical or essential to the practice of the invention, but not included in the independent claim is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Claim 7 is essential subject matter that has been omitted from the independent claim. The examiner has based the determination that claim 7 is essential subject matter on the fact that the applicant provided lengthy arguments as to why the step of "identifying potentially overlapping blocks that are likely to include a watermark signal" is critical to the invention in the response received on November 14, 2003 (see applicant's remarks: page 11, paragraph 2). Therefore, the examiner suggests incorporating the subject matter of claim 7 into claim 6 in order to obviate this rejection.

Claim Rejections - 35 USC § 102

8.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9.   Claims 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al.

(U.S. Patent No. 5,621,810 A).

As applied to claim 13, Suzuki et al. disclose an imaging system comprising: a device for

scanning or printing an image (see Fig. 2: As can be seen in the figure, a device is provided for

scanning or printing an image.); a digital watermark decoder in communication with said device

for intercepting portions of an image as the portions pass from one stage of a printing or

scanning process to another (see column 9, lines 42-47: The reference describes that a variety of

scanning procedures are initiated. Prior to the completion of the scanning process, the CPU

determines 4 likely areas (i.e. intercepting portions of an image as the portions pass from one

stage to another) where the red stamp mark (i.e. the watermark) is located. NOTE: The by adding

the modifier "digital" in front of "watermark decoder" it is unclear whether "digital" modifies

the watermark or the decoder. The claim can be interpreted to modify the decoder. Therefore,

since Suzuki et al. discloses a digital decoder, the reference meets the claimed limitation.), for

performing a watermark decoding operation on at least certain of said portions (see column 9,

line 66 – column 10, line 29: The reference describes that a pattern matching is performed on

each of the areas to determine if the level of correlation exceeds a certain threshold value. If the

correlation exceeds the threshold value, then it is indicated that the red stamp mark is present and

that the item is an authentic bill (i.e. performing a watermark decoding operation on each

portion).); and for providing a result of the decoding operation before the printing or scanning

process has completed for the image (see column 9, lines 23-25: The reference describes that if

the item is determined to be authenticate, then the system executes a measure for preventing

forgery (i.e. providing a result of the decoding operation). This measure is executed before the

printing process is complete.), the decoder including a manager for selecting blocks for

watermark decoding based on analysis of characteristics of the blocks indicating which blocks

are likely to have a recoverable watermark signal (see column 9, lines 42-61: The reference

describes that the areas (i.e. blocks) are stored (i.e. selected) in RAM 412 by the CPU (i.e.

manager) and then scanned with a window of 2x2 pixels to determine blocks of black pixels and

then perform pattern matching to determine if the block contains the red stamp (i.e. analyze

characteristics of the blocks to indicate which blocks have the watermark).).

As applied to claim 14, Suzuki et al. discloses that the system includes a printer

peripheral in communication with a computer, and a printer driver executing in the computer and

incorporating the watermark decoder (see column 11, lines 17-19: The reference describes that

the system can be utilized in a printer of the stand-alone type. Therefore the computer would be

peripheral to and in communication with the printer.).

As applied to claim 15, Suzuki et al. discloses that the system includes a scanner

peripheral in communication with a computer, and a scanner driver executing in the computer

and incorporating the watermark decoder (see column 11, lines 17-19: The reference describes

that the system can be utilized in a scanner of the stand-alone type. Therefore the computer

would be peripheral to and in communication with the scanner.).

10.   Claims 19 is rejected under 35 U.S.C. 102(e) as being anticipated by Ratnakar (U.S.

Patent No. 6,556,688 B1).

As applied to claim 19, Ratnakar discloses a method of image watermark encoding in a

printing process comprising: intercepting portions of an image as the portions pass from one

stage of a printing process to another (see Fig. 4B and column 6, lines 9-10: The reference

describes that the image data flows through the printing pipeline on a block-by-block basis.

Therefore, portions of an image are intercepted as they pass from one stage of printing to

another.); performing a watermark encoding operation on at least certain of said portions (see

Fig. 4B and column 6, lines 11-15: The reference describes that tiny modifications are made to

each block of image data to embed the pid (i.e. perform watermark encoding).), said encoding

including encoding calibration data into the image, said calibration data facilitating detection of a

watermark in a geometrically distorted version of the watermarked image (see column 9, lines

61-64: The reference describes that the system can detect a watermark by selecting a search

space based on the encoded information (i.e. calibration data) that includes variations for rotation

and offset (i.e. geometrically distorted version of the image).); and providing watermarked

portions of the image to a subsequent stage in the printing process (see Fig. 4B: As can be seen

in the figure, after a block of the image is embedded with the pid, it is provided to a subsequent

stage in the printing process.).

Claim Rejections - 35 USC § 103

11.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

12.   Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the

combination of Suzuki et al. (U.S. Patent No. 5,621,810 A) and Conley (5,689,626 A).

As applied to claim 3, Suzuki et al. discloses a method of image watermark decoding in a

printing or scanning process comprising: intercepting portions of an image as the portions pass

from one stage of the printing or scanning process to another (see column 9, lines 42-47: The

reference describes that a variety of scanning procedures are initiated. Prior to the completion of

the scanning process, the CPU determines 4 likely areas (i.e. intercepting portions of an image as

the portions pass from one stage to another) where the red stamp mark (i.e. the watermark) is

located.); performing a watermark decoding operation on at least certain of said portions (see

column 9, line 66 – column 10, line 29: The reference describes that a pattern matching is

performed on each of the areas to determine if the level of correlation exceeds a certain threshold

value. If the correlation exceeds the threshold value, then it is indicated that the red stamp mark

is present and that the item is an authentic bill (i.e. performing a watermark decoding operation

on each portion).); and providing a result of the decoding operation before the printing or

scanning process has completed for the image (see column 9, lines 23-25: The reference

describes that if the item is determined to be authenticate, then the system executes a measure for

preventing forgery (i.e. providing a result of the decoding operation). This measure is executed

before the printing process is complete.).

Claim 3 further calls for the watermark decoding operation to be performed in a driver

executing in a computer. While the system of Suzuki et al. clearly has a CPU, the use of a printer

driver to decode a watermark is not discussed. However, Conley et al., in the same field of

endeavor of image watermarking, and the same problem solving area of decoding or detecting

watermarks, discloses the use of a printer driver for associating a watermark file to a document

and also for selecting the watermark file based on a file identifier (i.e. decoding the watermark)

when printing the document (see column 3, lines 41-49).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to modify Suzuki et al. by adding the use of a driver for decoding as taught

by Conley et al. because "having the printer driver control printing … introduces greater

flexibility into the printing process", since "the printer driver can examine entire pages for …

objects that need special processing prior to printing" (see Conley: column 2, lines 63-67).

As applied to claim 10, Suzuki et al. discloses a method of image watermark decoding in

a printing or scanning process comprising: intercepting portions of an image as the portions pass

from one stage of the printing or scanning process to another (see column 9, lines 42-47: The

reference describes that a variety of scanning procedures are initiated. Prior to the completion of

the scanning process, the CPU determines 4 likely areas (i.e. intercepting portions of an image as

the portions pass from one stage to another) where the red stamp mark (i.e. the watermark) is

located.); performing a watermark decoding operation on at least certain of said portions (see

column 9, line 66 – column 10, line 29: The reference describes that a pattern matching is

performed on each of the areas to determine if the level of correlation exceeds a certain threshold

value. If the correlation exceeds the threshold value, then it is indicated that the red stamp mark

is present and that the item is an authentic bill (i.e. performing a watermark decoding operation

on each portion).); and providing a result of the decoding operation before the printing or

scanning process has completed for the image (see column 9, lines 23-25: The reference

describes that if the item is determined to be authenticate, then the system executes a measure for

preventing forgery (i.e. providing a result of the decoding operation). This measure is executed

before the printing process is complete.); wherein the result of the decoding operation is used to

trigger an action before printing or scanning of the image is complete (see column 9, lines 23-25:

The reference describes that if the item is determined to be authenticate, then the system executes a measure for preventing forgery (i.e. trigger an action). This measure is executed before the printing process is complete.).

Claim 10 further calls for using information in the watermark to index related information about the image in a database. The system of Suzuki et al. uses the watermark to authenticate a document; however, the reference does not disclose using the watermark to index related information about the image in a database. Conley describes the use of a watermark for such a purpose (see column 2, line 67 – column 3, line 1 and column 4, lines 51-53: The reference describes that a watermark file is linked to a document and that during decoding the printer driver scans all of the files based on a first identifier to find a watermark file that links to the document (i.e. related information about the image in a database).).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Suzuki et al. by using information in the watermark to index related information about the image in a database as taught in Conley because a "minimal amount of space [is used] to link a watermark file to a document" (see Conley: column 6, lines 19-20). Therefore, a large amount of information can be linked to a document by embedding only a small amount of information in the watermark.

13.   Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Suzuki et al. (U.S. Patent No. 5,689,626 A) and Conley (U.S. Patent No. 5,621,810 A), as applied to claim 3 above, and further in combination with Tillery, Jr. et al. (U.S. Patent No. 6,032,201 A).

Claim 4 calls for the printer driver to include 16-bit code, the watermark operation to be implemented in 32-bit code, and the watermark operation to be invoked from the 16-bit code through an application programming interface of the 32-bit code. Claim 5 calls for the 16 bit code to pass image data to the 32 bit code over a 16 to 32 bit bridge, and the bridge to include code enabling the 32 bit code to access data structures in the 16 bit code. These elements are absent from the combination of Suzuki et al. and Conley. Tillery, Jr. et al. discloses such a feature (see Fig. 1: As can be seen in the figure, the printer driver 103 is 16- bit, the software client 104 is a 32-bit code, and the application programming interface is met by SYSTEM.INI 102. The figure also depicts a 16 to 32-bit bridge 108.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of Suzuki et al. and Conley by adding the type of printer driver interface as disclosed by Tillery, Jr. et al. because the use of such an interface allows "the drivers [to be] automatically enabled for the proper hardware" (see Tillery, Jr. et al.: column 2, lines 23-24). Therefore, the use of the interface taught by Tillery, Jr. et al. would allow for the watermarking system to be automatically used on any computer.

14.   Claims 6, 8, 9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Suzuki et al. (5,621,810 A) and Kofune et al. (U.S. Patent No. 5,483,069 A).

As applied to claim 6, Suzuki et al. discloses a method of image watermark decoding in a printing or scanning process comprising: intercepting portions of an image as the portions pass from one stage of the printing or scanning process to another (see column 9, lines 42-47: The reference describes that a variety of scanning procedures are initiated. Prior to the completion of the scanning process, the CPU determines 4 likely areas (i.e. intercepting portions of an image as

the portions pass from one stage to another) where the red stamp mark (i.e. the watermark) is

located.); performing a watermark decoding operation on at least certain of said portions (see

column 9, line 66 – column 10, line 29: The reference describes that a pattern matching is

performed on each of the areas to determine if the level of correlation exceeds a certain threshold

value. If the correlation exceeds the threshold value, then it is indicated that the red stamp mark

is present and that the item is an authentic bill (i.e. performing a watermark decoding operation

on each portion).); and providing a result of the decoding operation before the printing or

scanning process has completed for the image (see column 9, lines 23-25: The reference

describes that if the item is determined to be authenticate, then the system executes a measure for

preventing forgery (i.e. providing a result of the decoding operation). This measure is executed

before the printing process is complete.); wherein the portions are buffered, and analyzed to

select blocks for watermark detection operations (see column 9, lines 42-61: The reference

describes that the areas (i.e. portions) are stored in RAM 412 (i.e. buffered) and then scanned

with a window of 2x2 pixels to determine blocks of black pixels (i.e. select blocks for watermark

detection operations).).

As applied to claim 8, Suzuki et al. discloses that the result of the decoding operation is

used to trigger an action before printing or scanning of the image is complete (see column 9,

lines 23-25: The reference describes that if the item is determined to be authenticate, then the

system executes a measure for preventing forgery (i.e. trigger an action). This measure is

executed before the printing process is complete.).

As applied to claim 9, Suzuki et al. discloses that the action includes stopping the printing

or scanning of the image (see column 9, lines 25-30: The reference describes that a signal is sent

to the printer unit to deposit black toner over the entire surface thereby disabling copying (i.e.
stopping the printing or scanning).).

Claim 6 further calls for the watermark decoding to be operable to decode a watermark
that has been embed redundantly in the image and varies in the image. Suzuki et al. discloses
only a single watermark pattern on the bill; however, Kofune et al., in the same field of endeavor
of image processing and the same problem solving are of banknote authentication, discloses a
bill with multiple patterns (i.e. a watermark that is embedded redundantly and varies) (see Fig.
5(a)).

It would have been obvious to a person of ordinary skill in the art at the time the
invention was made to modify Suzuki et al. by adding the use of additional watermark patterns
as taught in Kofune et al. because the additional watermark patterns will add an additional level
of security thus making it more difficult for a counterfeiter to forge the banknote.

As applied to claim 12, which merely calls for a computer readable medium on which is
stored software for performing the method of claim 6, the combination of Suzuki et al. and
Kofune et al. discloses such a computer readable medium since all of the processing performed
by Suzuki et al. is performed by computer.

15.   Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination
of Suzuki et al. (5,621,810 A) and Kofune et al. (U.S. Patent No. 5,483,069 A), as applied to
claims 6 and 8 above, and further in combination with Rhoads (WO 97/43736).

Claim 11 calls for the action to include using information in the watermark to fetch a web
page related to the image. This element is absent from the combination of Suzuki et al. and
Kofune et al.; however, Rhoads, in the same field of endeavor of image watermarking, discloses

such a feature (see page 80, lines 16-23: The reference describes that by selecting a read watermark option, a user can discover information relating to the image from an external source such as the World Wide Web.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of Suzuki et al. and Kofune et al. by adding the ability to use information in the watermark to fetch a web page related to the image as taught in Rhoads because such a system allows for a watermark containing a small amount of data to be embedded into an image and then linked to a large amount of data. Therefore, the watermark can be easily embedded into the image due to its relatively small size, and contain a large amount of information, since it is linked to a web page.

16.   Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ratnakar (U.S. Patent No. 6,556,688 B1) and Stefik et al. (U.S. Patent No. 5,629,980 A).

As applied to claim 18, Ratnakar discloses a method of image watermark encoding in a printing process comprising: intercepting portions of an image as the portions pass from one stage of a printing process to another (see Fig. 4B and column 6, lines 9-10: The reference describes that the image data flows through the printing pipeline on a block-by-block basis. Therefore, portions of an image are intercepted as they pass from one stage of printing to another.); performing a watermark encoding operation on at least certain of said portions (see Fig. 4B and column 6, lines 11-15: The reference describes that tiny modifications are made to each block of image data to embed the pid (i.e. perform watermark encoding).); and providing watermarked portions of the image to a subsequent stage in the printing process (see Fig. 4B: As

can be seen in the figure, after a block of the image is embedded with the pid, it is provided to a

subsequent stage in the printing process.).

Claim 18 further calls for encoding tracer data into the image in response to detecting a

watermark. Ratnakar discloses encoding authentication information into the image; however, the

reference does not teach encoding tracer data. Stefik et al., in the same field of endeavor of

image watermarking, discloses embedding tracer information in response to detecting a

watermark (see column 48, lines 17-26: The reference discloses that when a printer prints a

work, the fee is credited to the creator automatically by detecting a watermark. Then tracer

information is embedded in the image to prevent unauthorized printing of the document.

Therefore, the embedding of the tracer information is, in a sense, in response to the automatic

payment (i.e. detecting a watermark).).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to modify Ratnakar by adding the use of tracer information as taught in

Stefik et al. because embedding tracer information will "discourage unauthorized copying of

print outs" (see Stefik et al.: column 48, lines 20-21).

Conclusion

17.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing
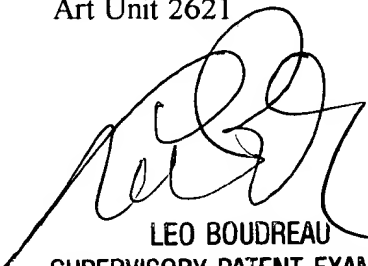
date of this final action.

18.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ryan J. Miller whose telephone number is (703) 306-4142. The

examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Leo H. Boudreau can be reached on (703) 305-4706. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ryan J. Miller
Examiner
Art Unit 2621

Ryan J. Miller

LEO BOUDREAU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600